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Bio-drainage for Improvement of Agricultural Productivity in Low Lying Areas

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Abstract

The bio-drainage system used to control the water logging hazards and restore the ground water table depth at a level favourable for other crops to grow. The water utilization efficiency per unit area of land improved through bio-drainage and associated cropping activities. The huge quantity of shallow and good quality groundwater that remains perpetually unutilized by the prevalent lowland cultivation system was effectively used by the biological drainage system. Thus the bio-drainage is expected to alleviate the land degradation problem due to high depth of water stagnant, to restore the crop cultivation programme on a sustainable way, to improve the water management practices, to improve the economic conditions of the lowland farmers and finally, to conserve the ecological values of this fragile agro-ecosystem. The objectives of efficient bio-drainage system are to evaluate ET and depended on growth characteristics of different trees and vegetation species having bio-drainage potential in the waterlogged land thereby to study the water table behaviour in the land under plantation and in the surrounding region and use the result in developing suitable plantation geometry to ensure desired water table draw-down, to assess interaction between bio-drainage plantation and co-existing crops and/or companion crops, to assess the value of the tree species through fodder, fuel wood and timber use, and to development of a new technology for land reclamation and evaluating its impact on soil, water and plant bodies in the basin.

Keywords: Bio-drainage, waterlogged areas, crop productivity, sustainable agriculture